

Figure 1

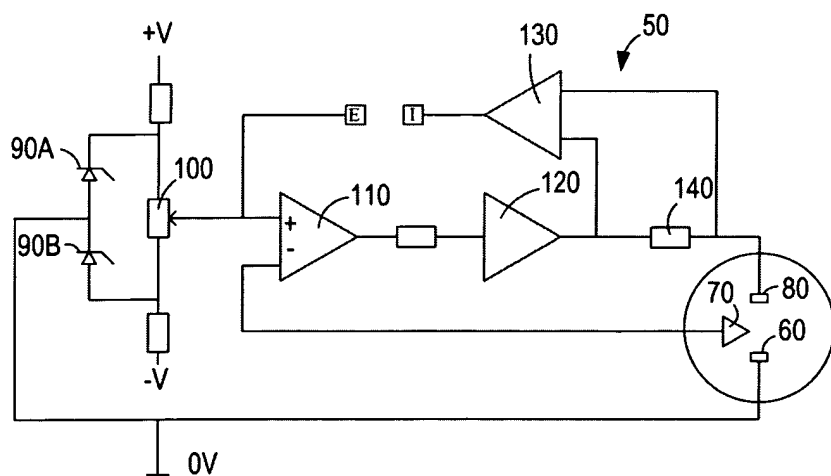


Figure 2

RECEIVED
NOV 17 2003
OIP EJC A2 3042

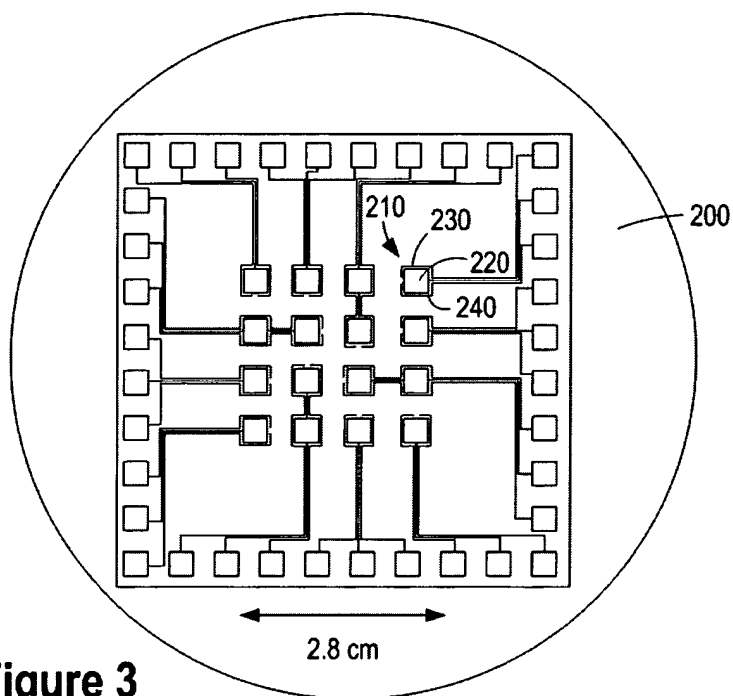


Figure 3

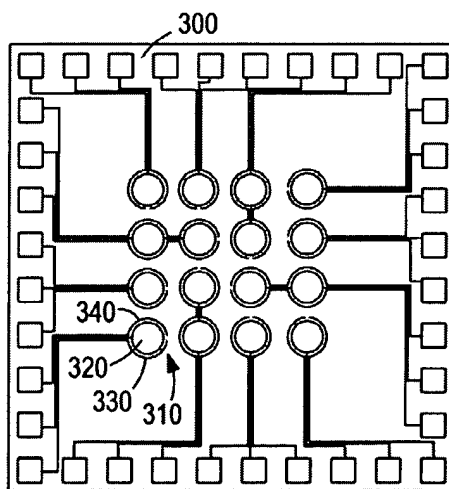


Figure 4

RECEIVED
NOV 17 2003
O I P E J C A 2
PATENT & TRADEMARK OFFICE

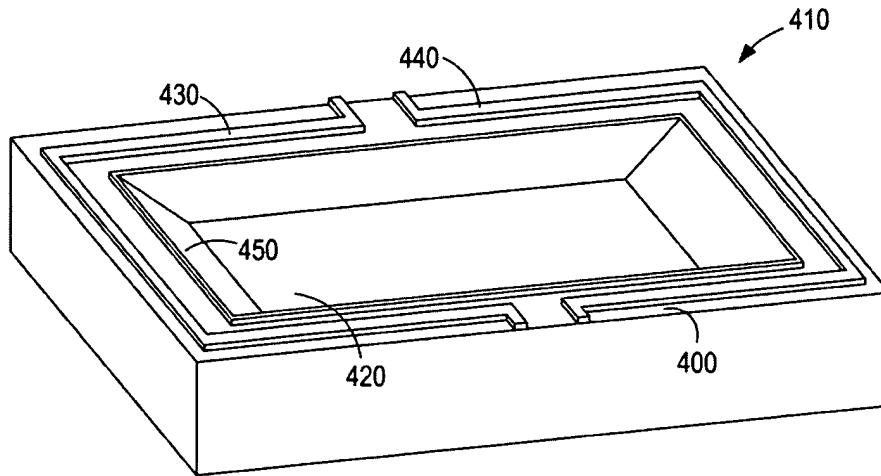


Figure 5

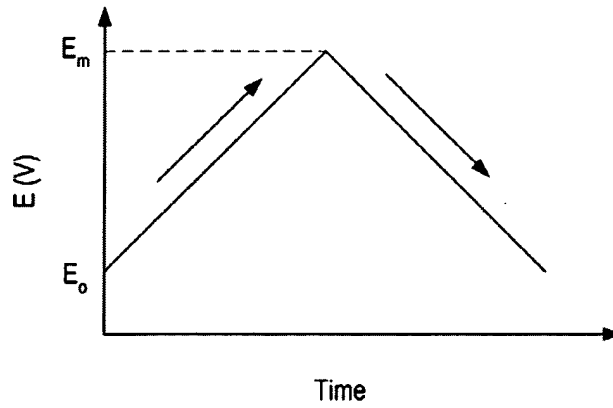


Figure 6

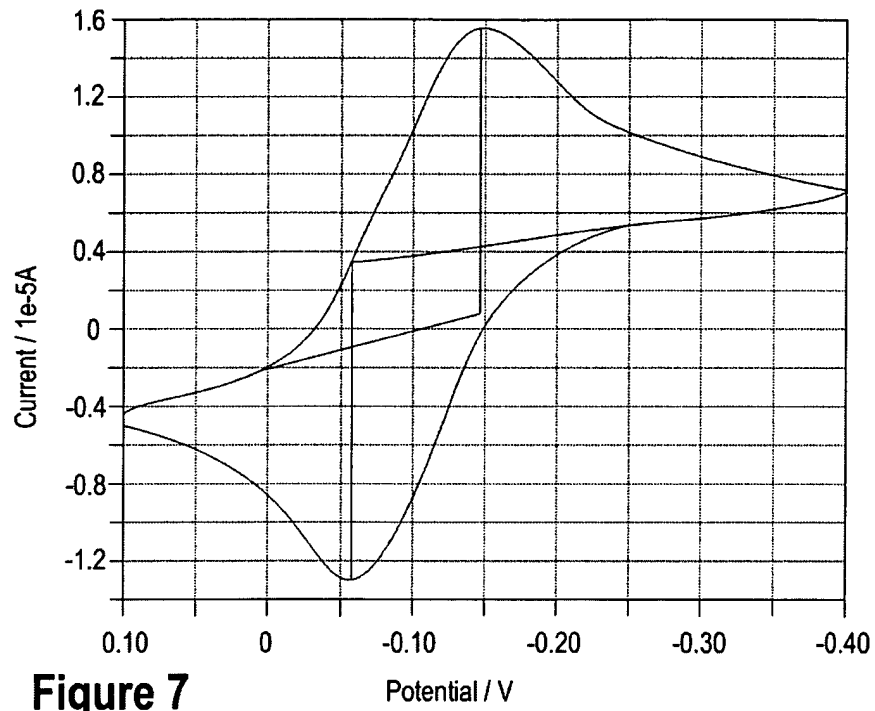


Figure 7

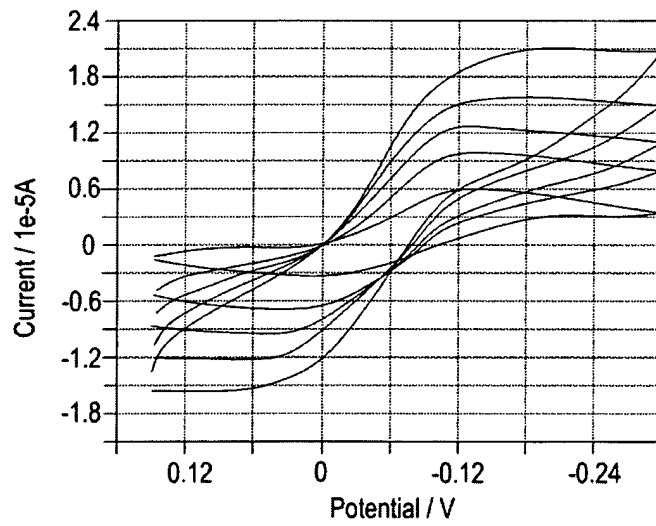


Figure 8

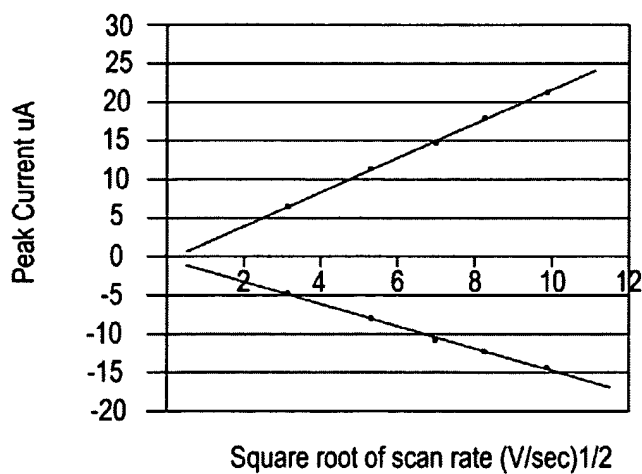
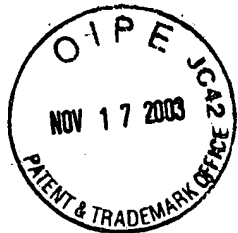


Figure 9

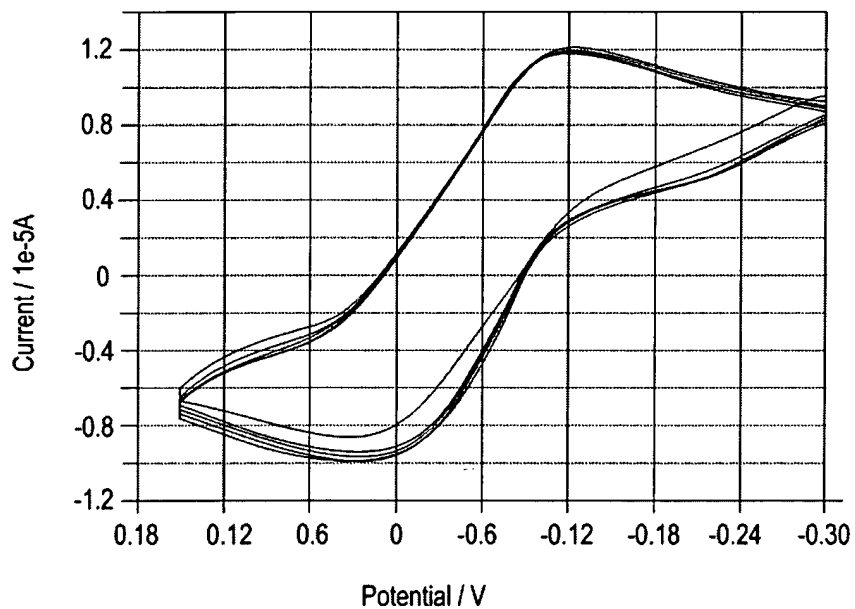


Figure 10

TIME: 11:00:00
DATE: 11/17/03
PAGE: 4

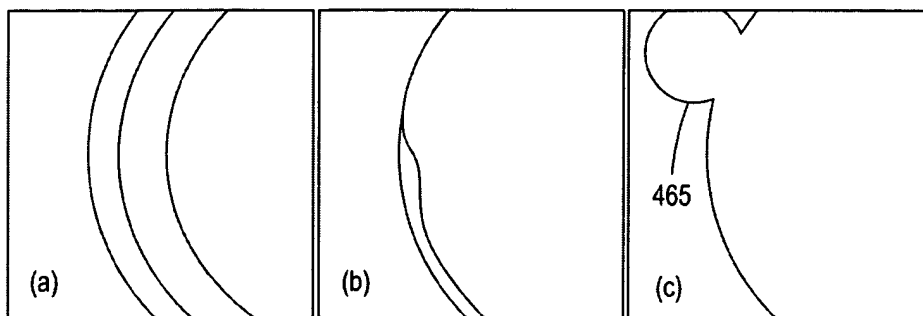


Figure 11

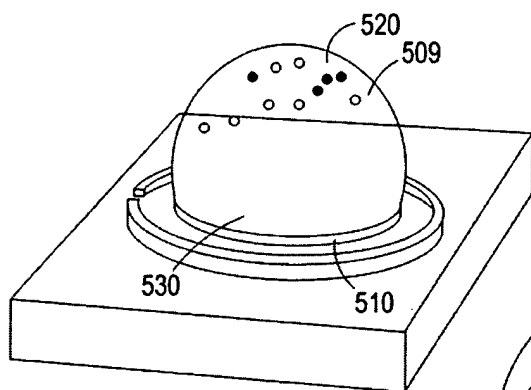


Figure 12

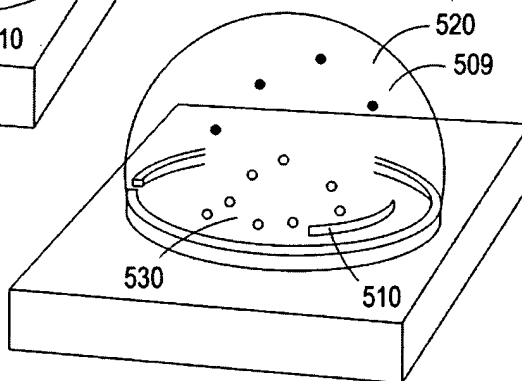


Figure 13

Handwritten notes and signatures at the bottom right of the page.

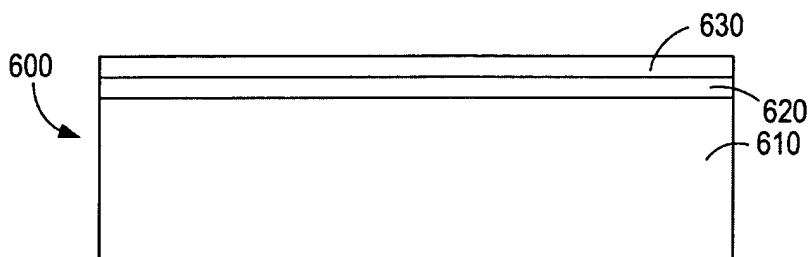


Figure 14

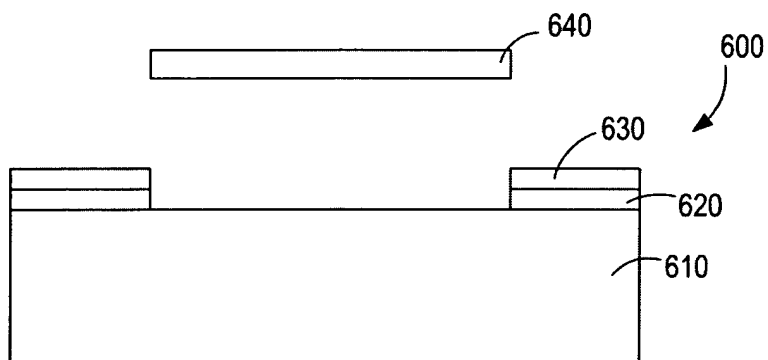


Figure 15

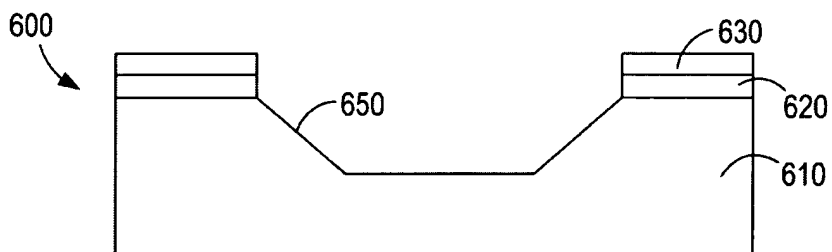


Figure 16

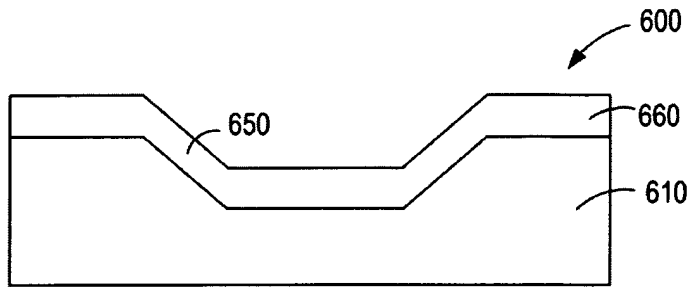


Figure 17

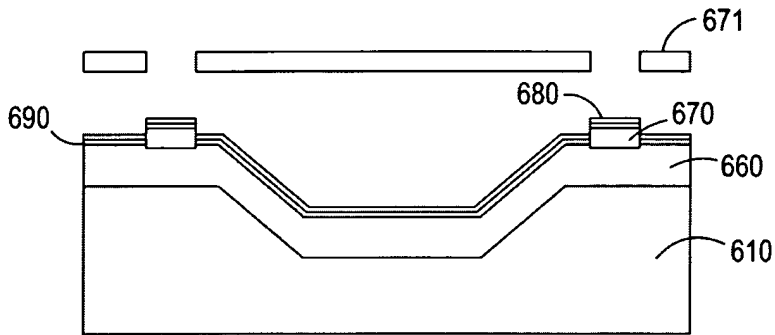


Figure 18

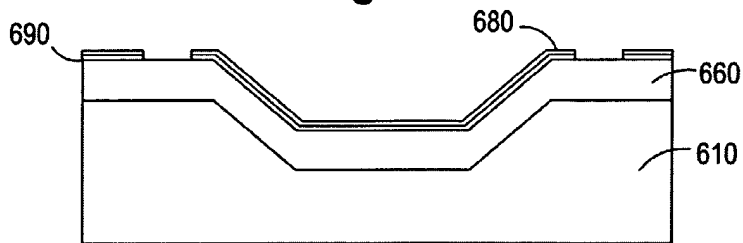


Figure 19

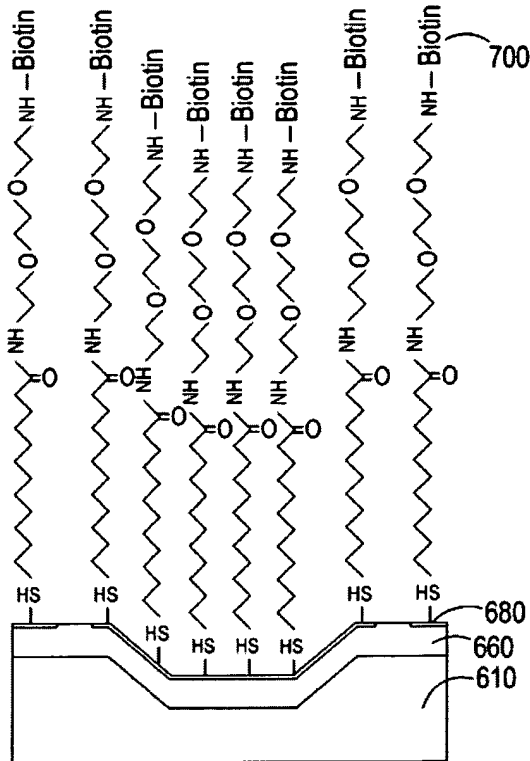


Figure 20

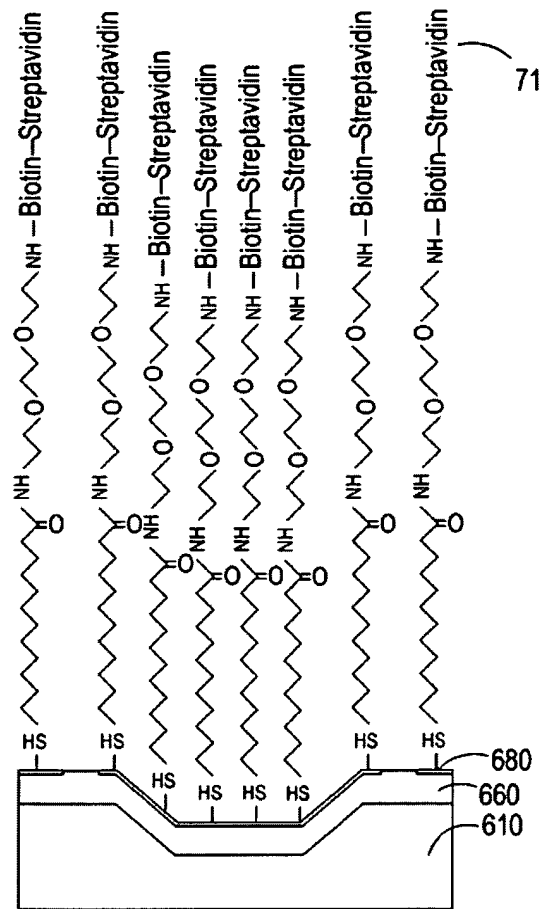


Figure 21

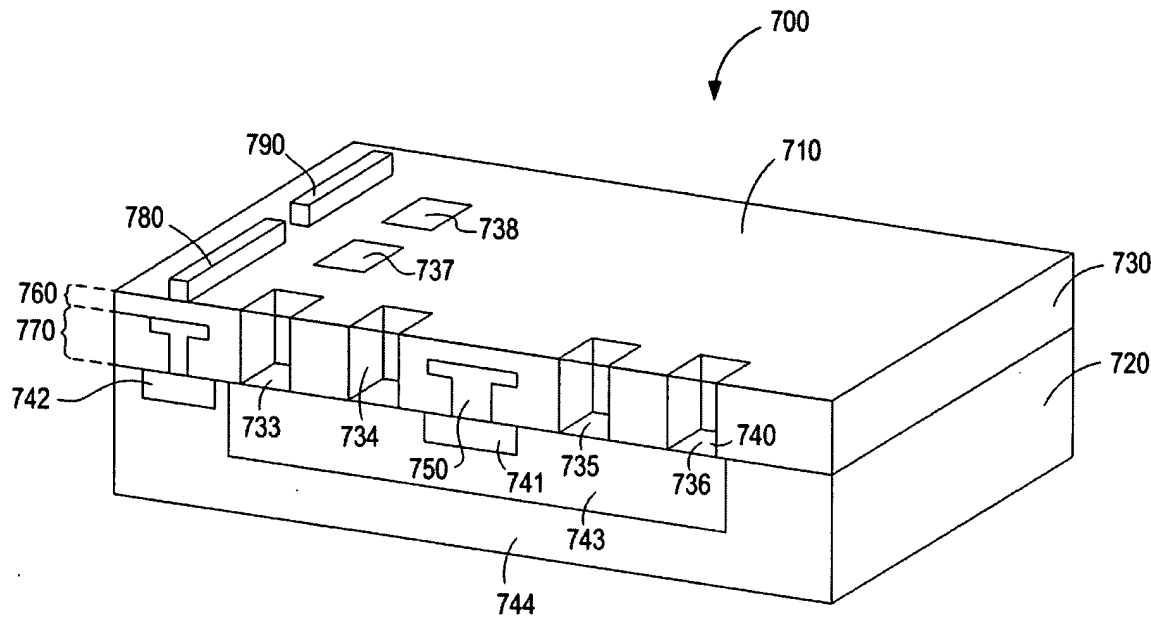


Figure 22

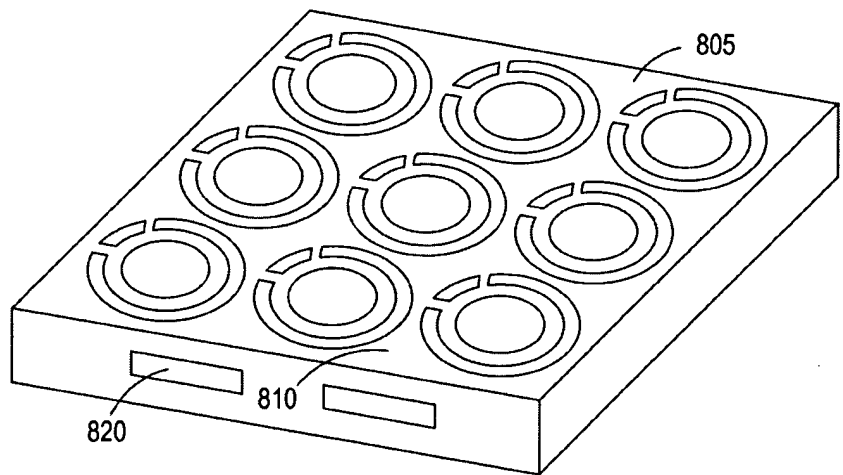


Figure 23



Blakely, Sokoloff, Taylor & Zafman LLP
Title: Biological Identification System With Integrated Sensor Chip
1st Named Inventor: Jen-Jr Vincent Gau
Application No.: 09/848,727
Sheet: 11 of 21

(714) 557-3800

Docket No.: 5876P002

RECEIVED

NOV 20 2003

TECH CENTER 1600/2900

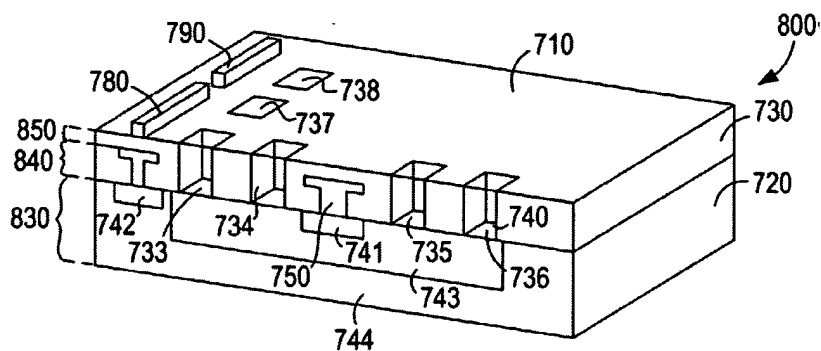


Figure 24



RECEIVED

NOV 20 2003

RECEIVED CENTER 1600/2900

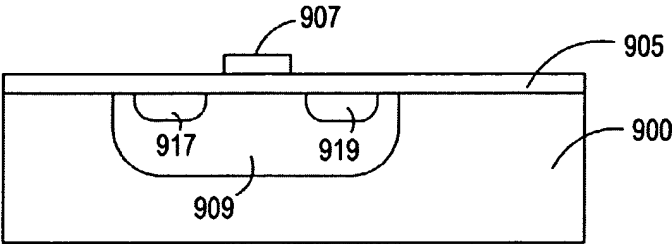


Figure 25

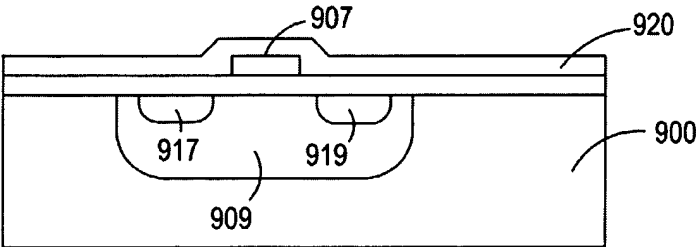


Figure 26

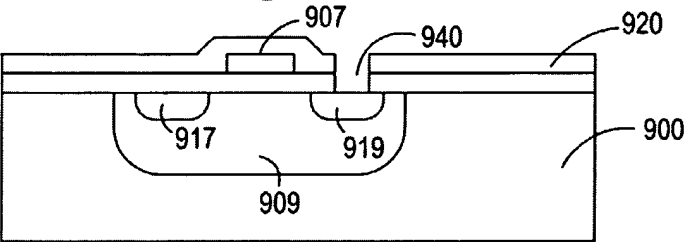


Figure 27

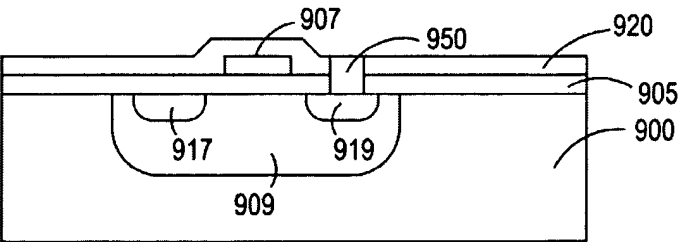


Figure 28



Blakely, Sokoloff, Taylor & Zafman LLP
Title: Biological Identification System With Integrated Sensor Chip
1st Named Inventor: Jen-Jr Vincent Gau
Application No.: 09/848,727
Sheet: 13 of 21

(714) 557-3800

Docket No.: 5876P002

RECEIVED
NOV 20 2003
TECH CENTER 1600/2900

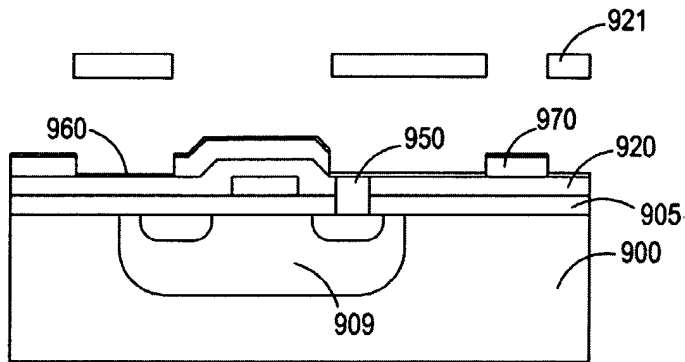


Figure 29

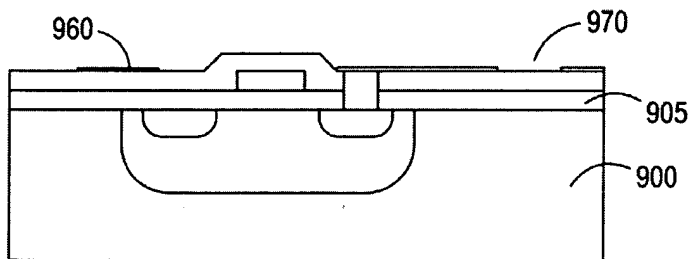


Figure 30



Blakely, Sokoloff, Taylor & Zafman LLP
Title: Biological Identification System With Integrated Sensor Chip
1st Named Inventor: Jen-Jr Vincent Gau
Application No.: 09/848,727
Sheet: 14 of 21

(714) 557-3800

Docket No.: 5876P002

RECEIVED

NOV 20 2003

TECH CENTER 1600/2900

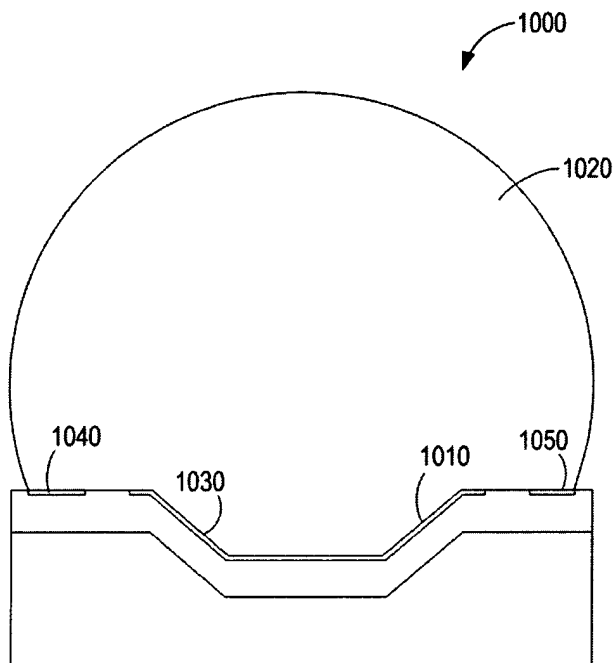


Figure 31



RECEIVED

NOV 20 2003

TECHNICAL CENTER 1600/2900

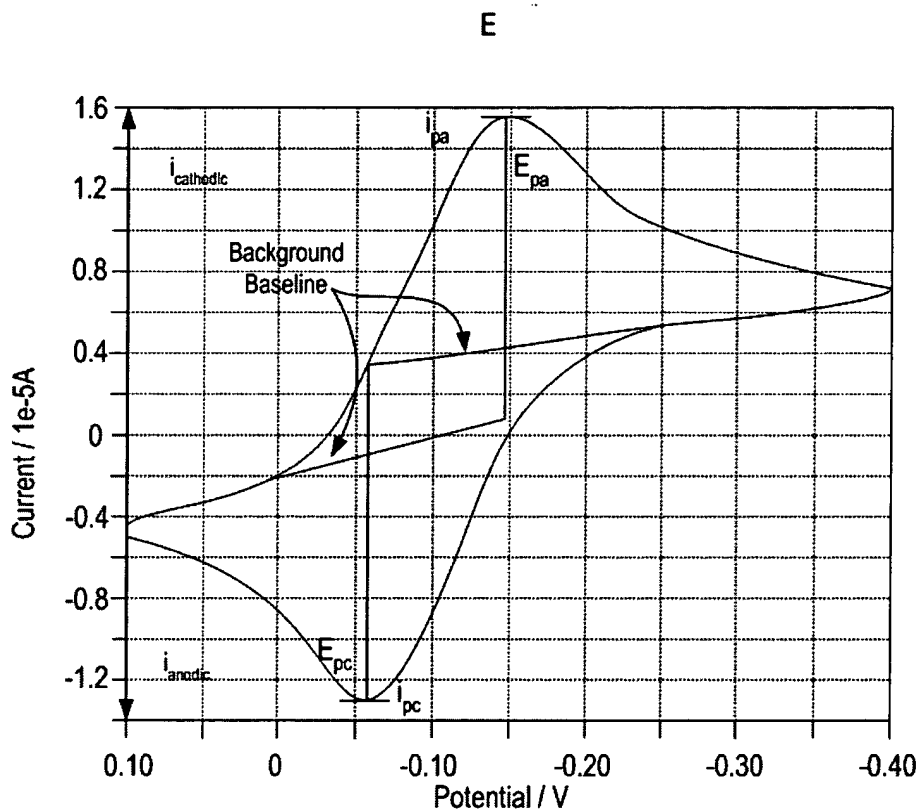


Figure 32

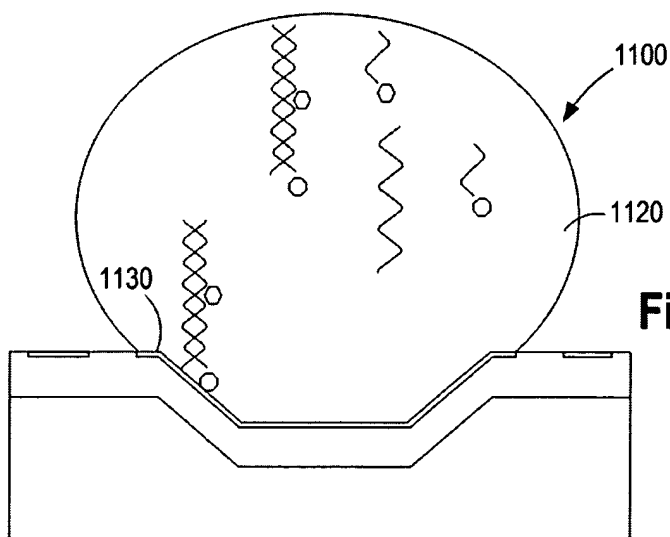


Figure 33



RECEIVED

NOV 20 2003

TECH CENTER 1600/2900

Figure 34

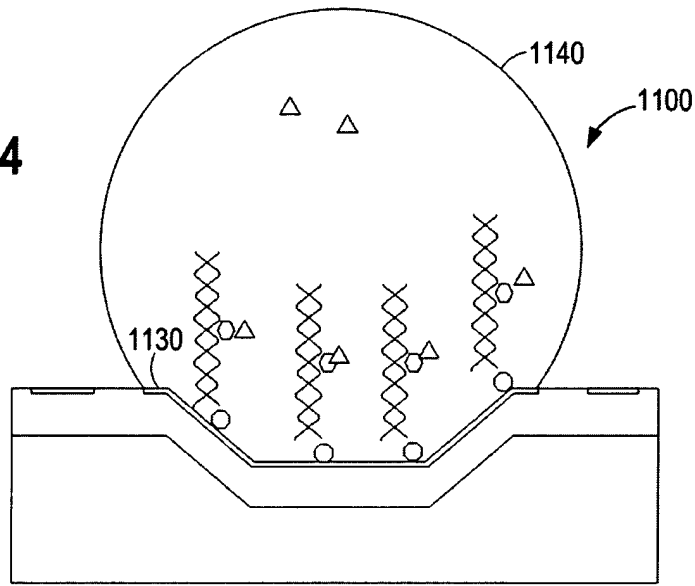
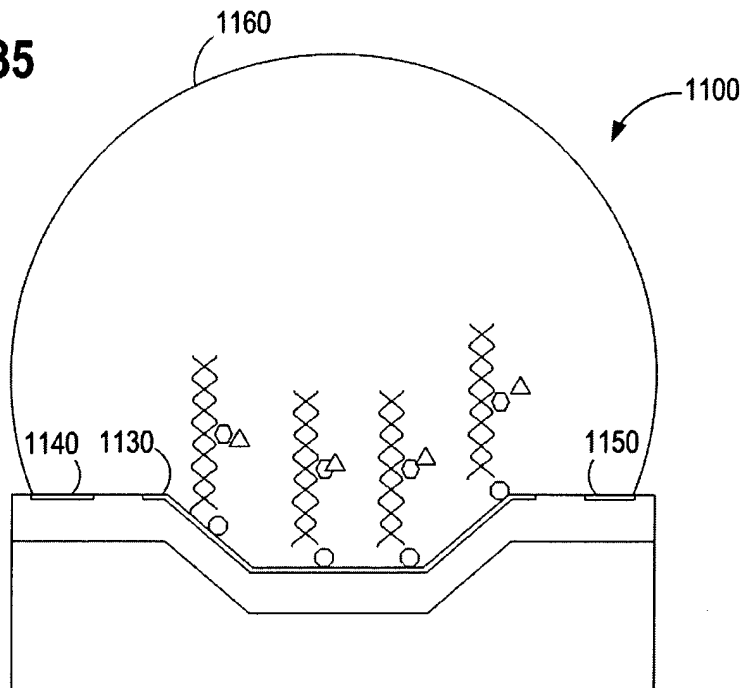


Figure 35





RECEIVED

NOV 20 2003

TECH CENTER 1600/2900

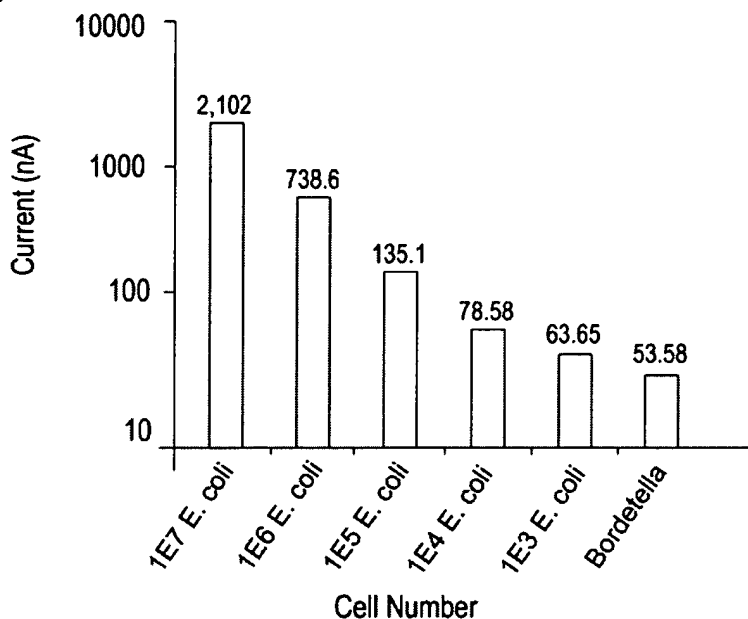
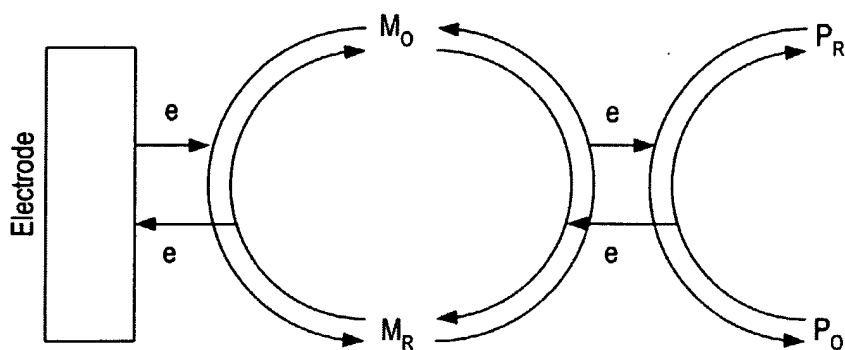


Figure 36



P_R : Reduced Peroxidase

M_O : Oxidized Mediator

P_O : Oxidized Peroxidase

M_R : Reduced Mediator

Figure 37



RECEIVED

NOV 20 2003

TECH CENTER 1600/2900

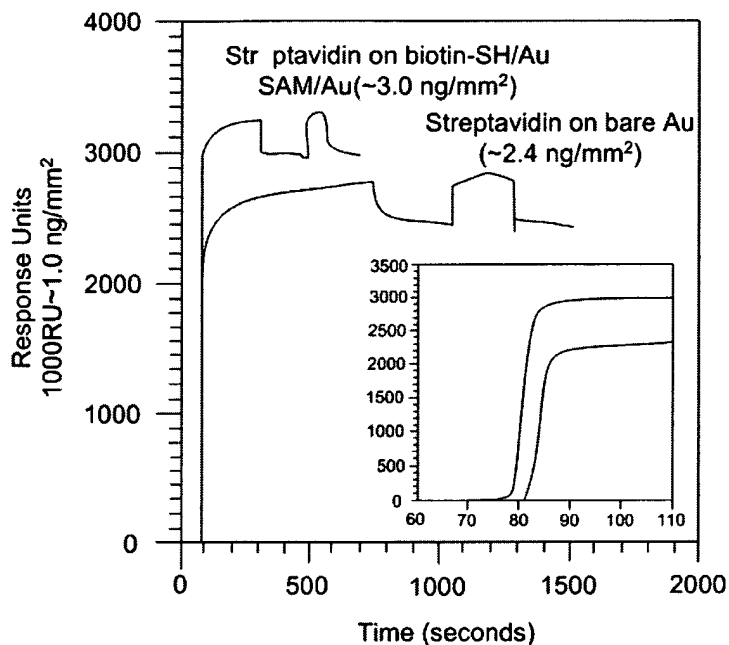


Figure 38

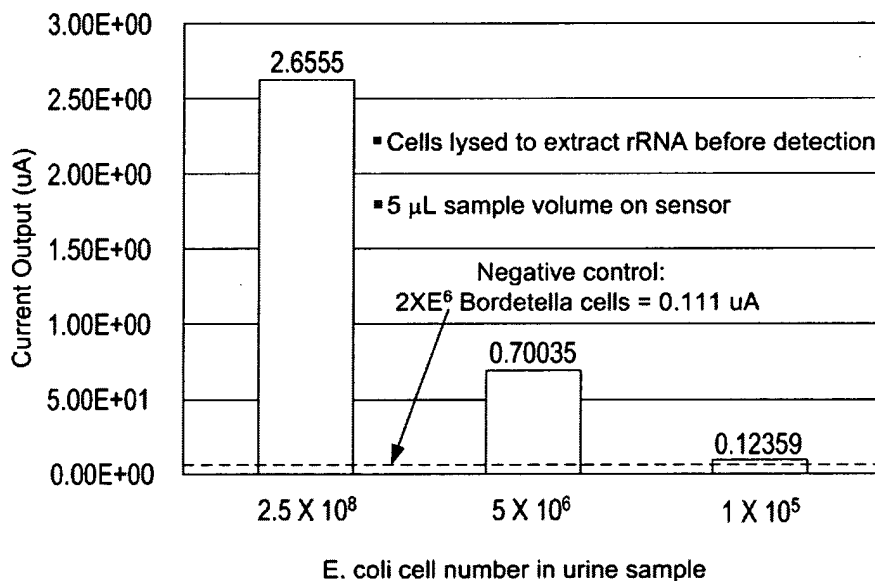
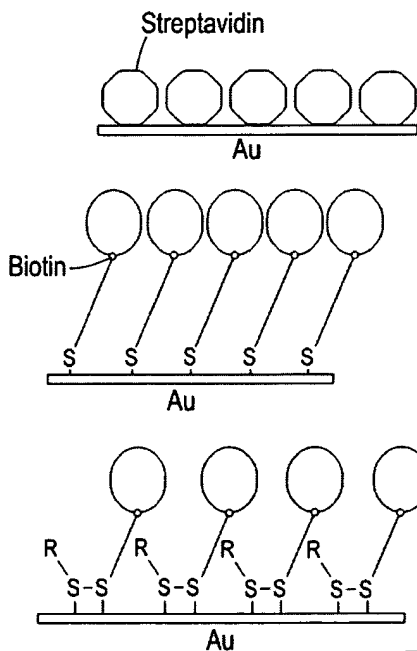
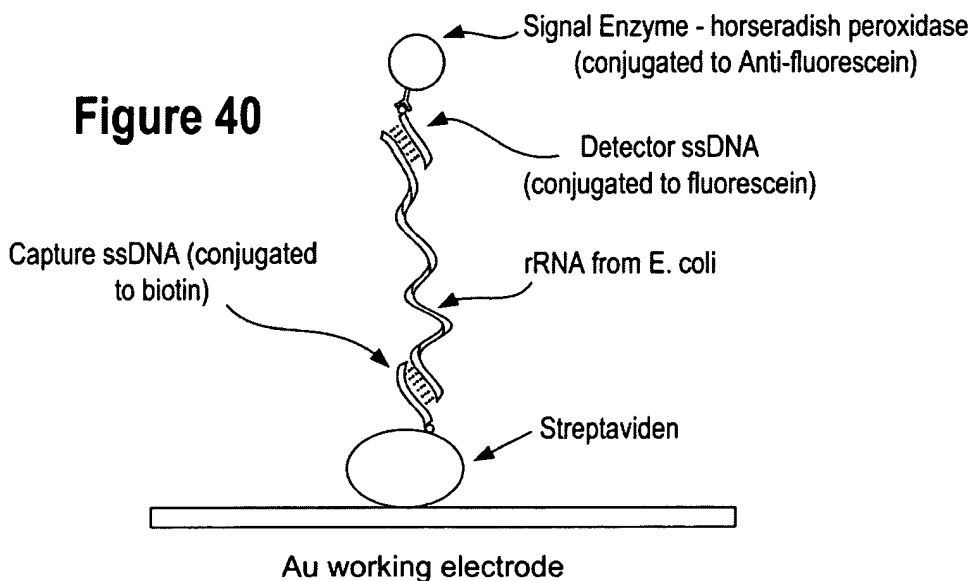


Figure 39



Figure 40



Approach 1. SAM of Streptavidin on bare Au

Approach 2. Streptavidin bound on SAM of biotin-DAD-C12-SH (12-mercapto(8-biotinamide-3, 6-dioxaoctyl)dodecanamide)



Approach 3. Streptavidin bound on SAM of biotin-HPDP, (N-[6-(biotinamido)hexyl]-3'-(2'-pyridyldithio)propionamide)

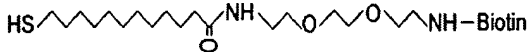


Figure 41



RECEIVED

NOV 20 2003

TECH CENTER 1600/2900

Comparison of various reagents for the desorption of streptavidin from surface as determined by surface plasmon resonance

Treatment Condition	Streptavidin on Bare Au ~2400 RU deposited Loss in Signal (RU)		Streptavidin on biotin-DAD-C12-SH/Au ~3000 RU deposited Loss in Signal (RU)		Streptavidin on biotin-HPDP/Au ~1700 RU deposited Loss in Signal (RU)	
1.0 M KCl	0	0	0	0	0	0
8 M Urea	280(12%)	370(15%)	790(26%)	1050(35%)	360(21%)	300(18%)
0.5% SDS	40(2%)	150(6%)	390(13%)	230(8%)	330(19%)	690(40%)
0.1 M HCl	0	0	0	0	0	0
0.1 NaOH	400(17%)	550(23%)	630(21%)	690(23%)	400(24%)	200(12%)
40% Formamide	0	0	0	0	0	0

Figure 42

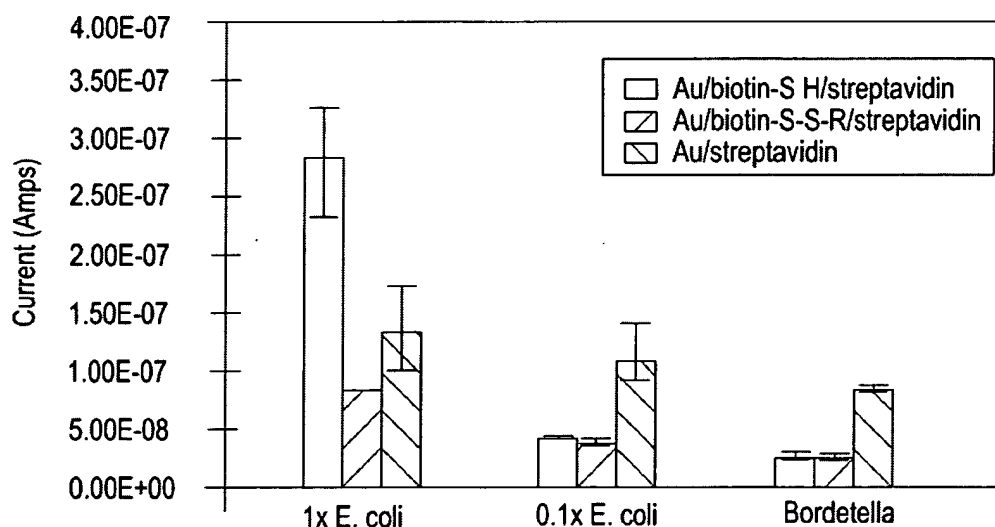


Figure 43



Blakely, Sokoloff, Taylor & Zafman LLP
Title: Biological Identification System With Integrated Sensor Chip
1st Named Inventor: Jen-Jr Vincent Gau
Application No.: 09/848,727
Sheet: 21 of 21

(714) 557-3800

Docket No.: 5876P002

RECEIVED

NOV 20 2003

TECH CENTER 1600/2900

Current (nA)

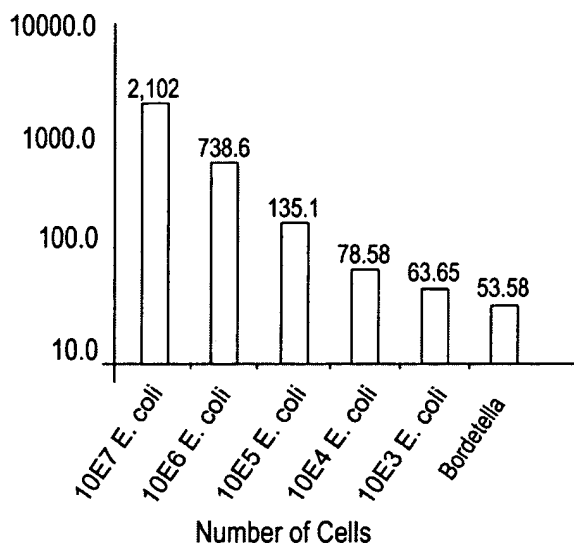


Figure 44